ACTA PALAEONTOLOGICA POLONICA

The tube wall of Cambrian anabaritids

Artem Kouchinsky and Stefan Bengtson
Acta Palaeontologica Polonica 47 (3), 2002: 431-444

Celestite/barite-replaced and phosphate-replicated tubes of Early Cambrian anabaritids from the northern part of the Siberian Platform (Anabar Shield) give new evidence on the wall-structure of these enigmatic fossils. The walls consist of fibres, interpreted as reflecting an original aragonitic fabric. Bundles of fibres are arranged in growth lamellae, and the latter form an angle of at least 45° with the inner tube wall. Where the outer tube surface projects into annular flanges, the lamellae have a chevron-like section due to the backwards deflection of the outer parts. Anabaritids are usually referred to the Cnidaria or left without systematic assignment, but earlier suggestions included affinity to the serpulid polychaetes. The chevron structure resembles that previously exclusively known from serpulids, but the presence of internal tooth-like structures in anabaritid tubes, perhaps compromising up-and-down movement through the tubes, continue to make a direct assignment to the Serpulida questionable.

Key words: Anabaritida, biomineralization, wall structure, aragonite, celestite, barite, Cambrian, Siberia

Artem Kouchinsky [artem.kouchinsky@geo.uu.se], Department of Earth Sciences, Historical Geology andPalaeontology, Norbyvägen 22, SE−752 36, Uppsala, Sweden; present adress: Department of Earth & Space Sciences, University of California L.A., Los Angeles, CA 90024, USA; Stefan Bengtson [stefan.bengtson@nrm.se], Department of Palaeozoology, Swedish Museum of Natural History, Box 50007, SE−104 05, Stockholm, Sweden.

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